

## Prevention of falls in elderly users of a Family Health Strategy in the city of Ananindeua-Pará

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Received: 10 Nov 2021,

Received in revised form: 01 Dec 2021,

Accepted: 10 Dec 2021,

Available online: 06 Jan 2022

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**Keywords—** Elderly, Falls, Prevention, Primary Care.

**Abstract—** Objective: understand the measures to prevent the risk of falling in elderly users of a family health strategy in the city of Ananindeua, state of Pará, Brazil. Methodology: Approximately 15 of the 316 elderly enrolled were selected: male and female, which sign the Free Informed Consent Form and were at the ESF on the day of the research. Were excluded from these research people aged 59 years or less, who not enrolled in the ESF, do not have mental conditions to carry out the research, and those who do not agree to sign the IC. Results: The results of the study showed that the predominant age range was between sixty-four (64) and eighty (80) years old, and 80% of the elderly population is female. Four categories emerged from this study for analysis covering the common context polydrug use in this age group, the multimorbidities, the history of falls, and the physical environment of residence of the elderly. Conclusion: Several factors were identified associated with the risk of falling among the elderly include the were visual deficits, advanced age, nervous system disease, excessive medications, slippery floors, among other situations that make the elderly suffer some risk of falling and have consequences relevant to their lives, it was also verified that the degree of autonomy of the elderly is quite

*comprehensive where they manage to do simple daily activities without making much effort.*

## I. INTRODUCTION

The human aging process is characterized by its complexity, as several physiological and systemic changes arise in the body, including the reduction of muscle tone, flexibility, and nerve endings, a process that generates limitations and vulnerabilities that generally interfere with the functions of the balance of the elderly, increasing the risk of falling [1]. According to the World Health Organization (WHO), a fall is an involuntary action that brings the body to the ground or another surface, it is estimated that one-third of elderly people over 65 years have an episode of fall per year. This is the second leading cause of death from unintentional injuries worldwide [2].

The Unified Health System (SUS) offers to the entire population, full, universal, and free access to health services, with emphasis on Primary Health Care (PHC) who has emerged as a priority level to assist and monitor the health status of the elderly population, also acting in the prevention of diseases and health promotion in this population. Thus, the importance of evaluating health care services for the elderly has increased, especially in primary care, to achieve active and healthy aging [3].

In this context, falls in the elderly are a geriatric syndrome that has great social importance in the context of public health, as it is one of the main causes of injuries, traumas, hospitalizations, and death in this age group. In addition, such events are associated with the functional decline that reduces autonomy, directly reflecting on the quality of life of the elderly, and such factors also bring an association between falling and frailty, another geriatric syndrome [4].

In a study on the association between the risk of falling and the frailty syndrome in elderly people living at home, the prevalence of the risk of falling was 51.7%, and in all scales used there was an association between frailty and risk of falls, the elderly considered frail had 6.05 times more chances of falling than those who were not frail, also emphasizing that the scales are accessible instruments for health professionals and can identify and prevent the risk of falls in the elderly, improving the quality of life in aging [5].

Not all seniors have access to sufficient information on the health of the elderly, and primary care is a single health system organization, where it will help the human needs of communities, to find out how families live from a core practice in family health an integral action to the needs of

individuals and co-responsibility for the health of the population in its territory [6].

Based on the above, this study aimed to understand the measures to prevent the risk of falling in elderly users of a family health strategy in the city of Ananindeua, state of Pará, Brazil.

## II. METHODOLOGY

This is descriptive research, with a qualitative exploratory approach. Qualitative research must have a statistical sample that consists of a set of individuals taken from a population, so that its study can provide important information about that population being studied, in this case, the elderly, to have more reliability [7].

The study was carried out in a Family Health Strategy (ESF) located in the Municipality of Ananindeua, State of Pará from August to October 2018. The ESF can be considered the government's main efforts to improve primary health care in Brazil. The ESF offers a wide range of primary health care services provided by a team consisting of one doctor, one nurse, one nursing assistant, and four or more community health workers. Approximately 15 of the 316 elderly enrolled were selected: male and female, which sign the Free Informed Consent Form and were at the ESF on the day of the research. Were excluded from these research people aged 59 years or less, who not enrolled in the ESF, do not have mental conditions to carry out the research, and those who do not agree to sign the IC.

The data collection procedure consisted of a semi-structured script with open and closed questions, with an accessible and simple language, all the information collected individually was transcribed in full by the authors of the work, where the participant's identity was preserved by the letter I, which means Elderly and alphanumeric encoding (I1, I2, I3,...). The semi-structured script for collected data is in an appendix to the article.

Data analysis was performed using the Bardin technique, which is a method used for organizing communication/information, which aims to obtain a description of the content of the indicator messages and knowledge regarding the conditions of variables inferred in the message which themes/topics and concepts/knowledge emerge [8].

To meet the requirements of all Ethics Committees and comply with Resolution No. 466, of 12 December 2012,

the research project was submitted to Plataforma Brasil, an institution by the federal government, which research projects from all over the country involving people are found.

This project was approved by the Research Ethics Committee (CEP) of Universidade Paulista under CAAE: 00212718.1.0000.5512 in which all ethical and legal aspects about research involving human beings were respected.

### III. RESULTS AND DISCUSSION

The results of the study showed that the predominant age range was between sixty-four (64) and eighty (80) years old, and 80% of the elderly population is female. Of these 9 consider themselves brown, 4 white, and 2 black regarding ethnicity. In terms of education, 1 is illiterate, 5 have completed elementary school, 7 have high school and 2 have higher education. The weight of respondents between 125,663 lb to 178,574 lb the height of the elderly is between 58,26772 into 66,14173 in, compatible with, and characteristics of the age.

Table 1. Clinical profile of the elderly interviewed in the family health strategy on the city of Ananindeua – Pará.

Features	Results
Gender	3 male and 12 female
Age range	64 – 80 years old
Breed	4 whites 9 browns 2 blacks
Schooling	1 illiterate 5 fundamental level 7 medium level 2 upper level
Weight	125,663 lb to 178,574 lb
Height	1.48cm – 1.68cm

\*Moisture content on oven dry weight basis

#### 3.1 - Category Analysis

**Category 1: “Do you use any type of medicine? Which?”, we highlighted the statements of the interviewees:**

"Yes, I always take medication when I feel something and when I feel pain, my children tell me not to take medication without needing it, but I'm afraid of getting sick and I end up taking it." (I.1)

"Yes, I started taking medicine for high blood pressure every day, the press 25 mg, sometimes I forget to take it and I've gone four days without taking the medicine." (I.2)

"I do, I use medication for high blood pressure, I developed about 2 years ago with the loss of my husband, I was stricken with suspicion of hypertension, I was referred

to the cardiologist and prescribed the medication “Brassart 160 mg/5mg 1x a day-night” (I.3)

"Yes, I use losartan and atenolol blood pressure medicine and I take one tablet each and I usually take them together at night, that's when I don't forget to take it." (I.4).

"Yes, I take 50 mg of losartan one in the morning and the other in the afternoon hydrochlorothiazide in the morning and the acetylsalicylic acid in the evening once, sometimes I change it and take it wrong, but I try not to forget to take it every day." (I.5).

"Yes, I use medicine for the bones, because I have an osteoporosis problem and I take alendronate for the treatment and when I feel any kind of pain I self-medicate, I take any medicine to reduce the pain" (I.6)

"Yes, I use medicine for diabetes, hypertension, bones, headaches, and body, I have all kinds of medicine." (I.7)

"Yes, I take medicine for blood pressure and cholesterol and back pain, I have back problems and sometimes I can't even walk straight, and I take the muscle medicine on my own, I haven't gone to the doctor to see this yet." (I.8)

"Yes, I use medication for diabetes, blood pressure and cholesterol and I also use eye drops for cataracts, but sometimes I forget to take it, my wife gets upset and I also take it at different times sometimes, because it's so much medicine that I get confused" (I. 9)

"Yes, the medications I take are insulin, lithiasis, omeprazole and I also take it when I feel pain." (I.10)

"Yes, I only take medication for cholesterol, because I feel dizzy sometimes and for pressure, and I also do treatment for leprosy" (I.11)

"Yes, I use the drugs metformin 850 mg, 1 human insulin, and new rapid insulin, foraseq 400 mg, amlodipine, losartan 50 mg. I use these medications because I am diabetic and hypertensive and asthmatic, I also had a stroke and was in the hospital for three days." (I.12)

"Yes, because of a fall in my work area, I slipped on the wet floor and fell hitting my head which caused a 25% hearing loss in my hearing and triggered glaucoma. The medicines I use are logan and Combigan. (I.13)

"Yes, antidepressant sertraline as a result of the loss of all the siblings in a family of 09 children and there were only 3 children left with him, and this fact shook my emotions a lot." (I.14)

"Yes, I take celebrates 500 as a result of joint pain." (I.15)

It is noted that, according to the interviewees' statements, everyone takes medication, and this ends up triggering some physiological changes in the body, such as disorders in the immune, nervous, metabolic, cardiac, gastrointestinal systems, such changes are intensified with the aging process. In Brazil and the world, public policies focused on humanization are also being applied to the health of the elderly, providing guidelines for care and prevention, with polypharmacy being one of the recurrent themes in emphasis for the WHO and in primary care since older people possess a greater risk of vulnerability [9].

The largest groups of medications used by these elderly people reflect the high prevalence of non-communicable chronic diseases such as systemic arterial hypertension and diabetes myelitis, mental illnesses such

as depression in the elderly population. It is important to discuss the consequences of polypharmacy for the elderly, as it is often associated with negative clinical issues that compromise the quality of life and safety of the elderly, being necessary to readjust the prescriptions always aiming to reduce the number of medications [10].

### **Category 2: "He does have non-communicable and communicable diseases"?**

"No, but I feel pain in the body, and I went to the doctor and said I have rheumatism and I also have arthrosis and pain in the spine and lumbar region, I feel pain all over the body" (I.1)

"Yes, I have high blood pressure and I can't tell you if I have another disease, as all I take care of is high blood pressure." (I.2)

"Yes, only arterial hypertension that I knew, I don't know if I have another disease, my blood pressure is very high sometimes because I feel a lot of headaches and sometimes, I even feel dizzy." (I.3)

"Yes, I have diabetes and take medication only for that, I have about five years to discover." (I.4)

"Yes, I've been diabetic for a long time and I try to keep it under control for me, it's very difficult because I eat everything and I don't diet, only when I'm high." (I.5)

"No, but I had a suspicion of diabetes because I was overweight and I felt very thirsty and the doctor gave me a very strict diet and said it had gone down, but it's been a while, I don't know how it is today." (I.6)

"Yes, I'm diabetic and hypertensive is what I know, I don't know if I have another disease." (I.7)

"As a child, I had measles and chickenpox which I remember having and I have hypertension and high cholesterol as I told you." (I.8)

"I've had many diseases as a child such as mumps, measles, chickenpox and I have diabetes and high blood pressure." (I.9)

"The only disease I've had is diabetes, I've never had another disease," (I.10)

"The only diseases I remember having been chickenpox and measles and I don't have diabetes." (I.11)

"The only diseases I have is diabetes, hypertension, and asthma, I get that after I had her first child." (I.12)

"Yes, for hypertension only, caused by emotional stress (annoyance) due to a speech at work. (I.13)

"I don't have chronic non-communicable diseases" (I.14)

"No, I only have bone problems, only." (I.15)

It was observed that due to the living conditions of the elderly interviewed, they are simple people and chronic non-communicable diseases were triggered by an unruly life of work, stress, and care for their children, that is, there was no attention to health, and also, they are people who were smokers, drinkers, and self-medicated. According to the IBGE, three out of four elderly people have chronic diseases and most of them are incurable, and most of them are non-transmissible, such as diabetes mellitus and systemic arterial hypertension. Other diseases include heart attack, stroke, pulmonary emphysema, chronic bronchitis, Alzheimer's disease, and other dementias [11].

In the study on the relationship between population aging and chronic non-communicable diseases, the participation of family members and health professionals stands out as an important factor to prevent the emergence of diseases in old age that can predispose to the risk of falling, being the guidance and monitoring the diet of the elderly essential components that directly influence the quality of aging of people [11].

**Category 3: "You have fallen once, in which place and how many times. if it has fallen, was there any consequence that committed health?"**

"Yes, already, on the street for a year or so, only once I fell and I didn't have any problems or consequences" (I.1)

"Yes, I have fallen several times at home, I even lost count, but the serious thing was that I tripped and there was a fracture in my left leg, and I was unable for 3 months to walk straight and do my personal needs, I couldn't even walk and sleep well" (I.2)

"It falls, only 4x, since I was 60 years old, I've counted, only the 4, and the oldest ones I'll explain to you when it happened and how it happened. The first fall was on the street near my residence, I was on my way to the fair when I bumped into a rock that was on the way and I got distracted, not watching the fall, I lost my balance with a stumbling block. The second one was at home, I usually relax in the room in the hammock, I went to put it on the guard and I got distracted by looking at the TV and it didn't fit and when I lay down it fell, I fell on my back, there was no fracture, my daughter took me to the hospital emergency room, the doctor only confirmed after an X-ray exam that there was no fracture, only muscle pain. The third fall I set up the hammock to relax, as I had arrived from the street and wanted to lie down for a while, so I went to set up the hammock and I got distracted by thinking I was armed, which gave rise to the fall. There

was no fracture, I just hit the back, again I went to the emergency room and the doctor told me it was just muscle pain." (I.3)

"I've already fallen on the street several times, I got dizzy and when I got off the bus, at home doing activities in the house, kitchen, and bathroom, at work too, I had the consequence that I put my leg in a cast, my elbow swelled and I fell in a sitting position and I feel pain in my legs. legs and even today it hurts" (I.4)

"Yes, twice, once at home I got dizzy and hit my head, the other time I was careless and fell and hit my head again and went to the emergency room and I had no serious consequences, just a swelling" (I.5)

"Yes, many times, and all of them were in my house, in the bedroom, in the living room, in the kitchen, in the bathroom and the backyard and all of them had scratches on my arms and legs and pain in my muscles because I usually beat my arms and legs." (I.6)

"Yes, I fell in the bathroom and hit my head, in the living room I slipped and in the bedroom, I tripped over something that was on the floor and ended up falling and hit my arm." (I.7)

"Yes, more than three and all went home and the most serious was when I climbed onto the bed and lost my balance and fell over my arm, my shoulder tendon was injured and I had surgery and I still don't have the strength on the left arm, I can't carry anything heavy" (I.8)

"I have fallen on the street several times, I trip over sidewalks sometimes, as I can't see right due to a cataract surgery I had, my vision has been impaired, the night is worse, I sometimes fall at home, and I always get some bruises." (I.9)

"Several times and all were on the street, and it was about 05 times, and I had no serious consequences, only muscle pain." (I.10)

"I've fallen a couple of times on the street, one was on a bicycle and another tripped and my leg and knee were inflamed, and I wasn't unable to do so, just having difficulty walking for a few days." (I.11)

"I've already fallen at home twice, I slipped, because my tile is very smooth, it was wet and I only felt pain in the leg I hit." (I.12)

"Yes, at my workplace 01 times and home 01, as a result of an emotion falling down the stairs, there was a 15-day absence from the workplace and at home, I stayed away for 07 days and underwent physical therapy." (I.13)

"Yes, 01x on the street, I felt it was after using a drug and I felt sleepy" (I.14)



"Yes, 10 times and all on the street and I was away from my work, and I was away for 06 months for treatment. The falls were caused by the unevenness of the sidewalks and because I'm vain and I wear shoes with small heels." (I.15)

The subject of falls for people with advanced age is a relevant topic and accidents are common at this stage of life, which can happen in a family environment or not, there are light or serious consequences that may have intrinsic and extrinsic factors. So the need for senescence for health treatment is very common due to the frailty of their ages, mainly in the family health strategy, which is a public service aimed at communities in general, and as a rule, there is a significant population of elderly [12].

The aging of the oldest old needs help and understanding of the younger population, as aging is an irreversible process that cannot be seen as negatively as most people do, and old age is a stage that should be seen with a glance more careful and wiser, as this phase is conducive to having more pathologies and care should be more elaborate [13].

All older people have already had some kind of fall and the most common places are their homes, streets, and buses, due to various factors such as the use of medication, dark place, inadequate vision, difficulty in balance, reduced muscle strength in the upper limbs and inferiors, among others. The fall in the elderly is a concern for public health in Brazil, as it can cause major injuries such as trauma, and even death. And this can be due to several factors such as drug interactions, intrinsic and extrinsic factors, side effects, and adverse reactions that can make the elderly suffer some consequences [14].

The home environment is one of the most common places for the occurrence of episodes of falls, where it should be a safe place ends up becoming dangerous and can cause problems with mobility and, consequently, tissue damage, injuries, hospitalization, fear, and loss of autonomy. The environmental risk factors most present in homes where there are accidents are slippery floors, inadequate shoes, poor lighting, and objects in high places [15].

**Category 4: "The physical space where you reside has a fall risk protection structure (bathroom, bedroom, living room, etc...). comment."**

"My house is very simple and has a wooden handrail on the stairs, but it is very firm." (I.1)

"The land of my house is low, so my house is low and the only thing it has is the non-slip floor in the bathroom." (I.2)

"Yes, it is undergoing a reform for adaptation and putting a non-slip masonry handrail on the stairs, rubber for the floor, non-slip floors. In my house there is only one ladder." (I.3)

"My house is a little narrow and does not have stairs and there is a part of the room that has non-slip tiles" (I.4)

"In my house, there is no type of protection, but I always try to leave it clean and nothing wet on the floor." (I.5)

"In my house, there is only non-slip flooring in the bathroom, the rest of the house is normal flooring." (I.6)

"At home it's simple, we don't have non-slip flooring or stair protection, but I always try to keep it clean and free from dirt and I don't have much furniture in my house or carpet." (I.7)

"In my house, there is no structure for the risk of falls, only there are no rugs in the living room and I took vases inside the house and in my house, it has a second floor but I don't go upstairs and on this stairs, there is no handrail." (I.8)

"My house is very simple, it has non-slip tile in the bathroom, that's all." (I.9)

"In my house, there is a non-slip tile in the bathroom, the only thing and I try not to put a rug near the doors so I don't fall." (I.10)

"In my house, the floor is common, it has no non-slip floor and there is nothing against preventing the risk of falls." (I.11)

"My house is very simple, it has a room with a living room and bathroom and on top, there is a large bedroom, but there is no protection against falls, the stairs on one side have no protection and my tile is smooth in all compartments and has a knocker on the bathroom door." (I.12)

"There are few compartments in my house to prevent falls, only in the bathroom that has a non-slip floor. (I.13)

"No, my house is made of masonry and the tile is smooth and has no stairs, but my wife always leaves the house clean. (I.14)

"In my house, the only thing it has is the proper non-slip floor in the bathroom." (I.15)

The protection in the life of the elderly is something very important, especially in the places where they live, but not everyone has the financial means to change their residence, but there are simple precautions that can be taken. The elderly person's booklet has important guidelines to avoid falls, such as not using a carpet, stairs and hallways must have handrails on both sides, using

closed shoes with rubber soles, placing non-slip mats in the bathroom, avoiding walking in areas with damp floors, among others [16].

Most elderly people, after a fall episode, develop fear and low confidence, which becomes a disabling factor and reduces the mobility and functionality of this elderly person, thus affecting their quality of life and causing functional damage over time, it is important to emphasize too the omission of their falls, whether out of fear, shame or getting.

too angry, it is always important for the health professional to emphasize and ask about the subject during the consultation with the elderly [18].

#### IV. CONCLUSION

Primary health care is important, as it performs prevention, promotion, diagnosis, and initial treatments to the population's health, especially in public policies aimed at the health of the elderly, which requires greater attention.

In the research, the factors associated with the risk of falling among the elderly in the FHS were visual deficits, advanced age, nervous system disease, multimorbidity and polydrugs, slippery floors, among other situations that make the elderly suffer some risk of falling and have consequences relevant to their lives, it was also verified that the degree of autonomy of the elderly is quite comprehensive where they manage to do simple daily activities without making much effort.

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